REPLACEMENT CLAIMS

1. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing etching bath for processing semiconductor wafers, said method comprising:

immersing wafers in a bath of semiconductor processing fluid; and

reducing a volume of semiconductor processing fluid in said bath by rapidly displacing an upper portion of semiconductor processing fluid from said bath while said wafers are immersed in said bath to remove said surface contaminants from said air/liquid interface.

7. (Amended) A method for reducing the contamination on a semiconductor wafer from a wet etching bath comprising:

processing said semiconductor wafer in said wet etching bath containing an etching fluid;

subsequently rapidly reducing a volume of said wet etching bath by removing a substantial portion of an upper portion of said etching fluid from said wet etching bath to remove surface contaminants from an air/liquid interface of said wet etching bath while retaining said semiconductor wafer in said wet etching bath; and

subsequently removing said semiconductor wafer from said wet etching bath.

11. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing etching bath for processing semiconductor wafers, said method comprising reducing a volume of said semiconductor processing bath by rapidly removing an upper portion of a semiconductor processing fluid present in said bath, while said wafers are in said bath, by opening a valve in said bath to remove said surface contaminants from said air/liquid interface.

12. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing cleaning bath for processing semiconductor wafers, said method comprising reducing a volume of fluid in said semiconductor processing cleaning bath by rapidly removing an upper portion of a semiconductor processing fluid present in said bath, while said wafers are in said bath, by hingedly releasing a door located at an upper portion of said bath to remove said surface contaminants from said air/liquid interface.

14. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing etching bath for processing semiconductor wafers, said method comprising reducing a volume of fluid in said semiconductor processing cleaning bath by rapidly removing an upper portion of a semiconductor processing fluid present in said bath, while said wafers are in said bath, by rapidly removing a wafer boat containing said semiconductor wafer from said bath to remove said surface contaminants from said air/liquid interface.

15. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing cleaning bath for processing semiconductor wafers, said method comprising reducing a volume of fluid in said semiconductor processing cleaning bath by rapidly removing an upper portion of a semiconductor processing fluid present in said bath, while said wafers are in said bath, by telescopically collapsing sidewalls of a vessel containing said bath to remove said surface contaminants from said air/liquid interface.

17. (Amended) A method for etching a semiconductor wafer, said method comprising:

placing an aqueous hydrofluoric acid etching fluid into a wet etching vessel;

immersing said semiconductor wafer in said etching fluid;

contacting said semiconductor wafer with said etching fluid for a predetermined time;

reducing a volume of said etching fluid in which said wafers are immersed by rapidly removing a portion of said etching fluid from the upper surface of said wet etching vessel while keeping said semiconductor wafer immersed in said etching fluid; and

removing said semiconductor wafer from said etching fluid.

21. (Amended) A method for etching a semiconductor wafer, said method comprising:

placing an etching fluid into a wet etching vessel;

placing said semiconductor wafer in said etching fluid;

contacting said semiconductor wafer with said etching fluid for a predetermined time; and

reducing a volume of said etching fluid by rapidly removing a portion of said etching fluid from the upper surface of said wet etching vessel by opening a valve in said wet etching vessel.

25. (Amended) A method for etching a semiconductor wafer, said method comprising:

placing an aqueous hydrofluoric acid solution into a wet etching vessel;

placing said semiconductor wafer in said aqueous hydrofluoric acid solution;

contacting said semiconductor wafer with said aqueous hydrofluoric acid solution for a predetermined time; and

reducing a fluid-containing volume of said wet etching vessel so as to rapidly displace a portion of said aqueous hydrofluoric acid solution from the upper surface of said wet etching vessel by telescopically collapsing sidewalls of said wet etching vessel.

44. (Amended) A method for reducing the contaminants on a silicon wafer during a wet etching process, said method comprising:

immersing a wafer boat suspended on a lifting arm in an etching vessel having an aqueous hydrofluoric acid solution therein for a sufficient time to etch said silicon wafer; and

rapidly removing said wafer boat from said etching vessel to remove surface contaminants residing on the upper surface of said aqueous hydrofluoric acid solution by an upward movement of said arm, thereby causing said aqueous hydrofluoric acid solution to spill out of said vessel.

61. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing bath for processing semiconductor wafers, said method comprising:

reducing a volume of said semiconductor processing bath by rapidly removing an upper portion of a semiconductor processing fluid present in said bath, while said wafers are in said bath, to permit flow of said upper portion of said processing fluid and thereby break eddy currents holding said surface contaminants at said air/liquid interface.

68. (Amended) A method for removing surface contaminants from an air/liquid interface of a semiconductor processing bath for processing semiconductor wafers, said method comprising:

reducing a volume of said semiconductor processing bath by rapidly removing an upper portion of a semiconductor processing fluid present in said bath, while said wafers are in said bath, to permit flow of said upper portion of said processing fluid and thereby break surface tension forces holding said surface contaminants at said air/liquid interface.

75. (Amended) A method for reducing the contamination on a semiconductor wafer from a wet etching bath comprising:

processing said semiconductor wafer in said wet etching bath containing an etching fluid;

subsequently reducing a volume of etching fluid in said wet etching bath and breaking eddy currents of said wet etching bath by rapidly removing an upper portion of said etching fluid from said wet etching bath, said act of breaking said eddy currents further releasing surface contaminants which are formed at an air/liquid interface of said wet etching bath and held at said air/liquid interface by said eddy currents; and

subsequently removing said semiconductor wafer from said wet etching bath.

76. (Amended) A method for reducing the contamination on a semiconductor wafer from a wet etching bath comprising:

processing said semiconductor wafer in said wet etching bath containing an etching fluid;

subsequently reducing a volume of said wet etching fluid and breaking surface tension forces of said wet etching bath by rapidly removing an upper portion of said etching fluid from said wet etching bath, said act of breaking said surface tension forces

further releasing surface contaminants which are formed at an air/liquid interface of said wet etching bath and held at said air/liquid interface by said eddy currents; and

subsequently removing said semiconductor wafer from said wet etching bath.

77. (Amended) A method for reducing the contamination on a semiconductor wafer, said method comprising:

processing said semiconductor wafer in a static etching bath containing an etching fluid; and

reducing a volume of said etching fluid by rapidly removing an upper portion of said etching fluid while said semiconductor wafer is in said static etching bath.